

100

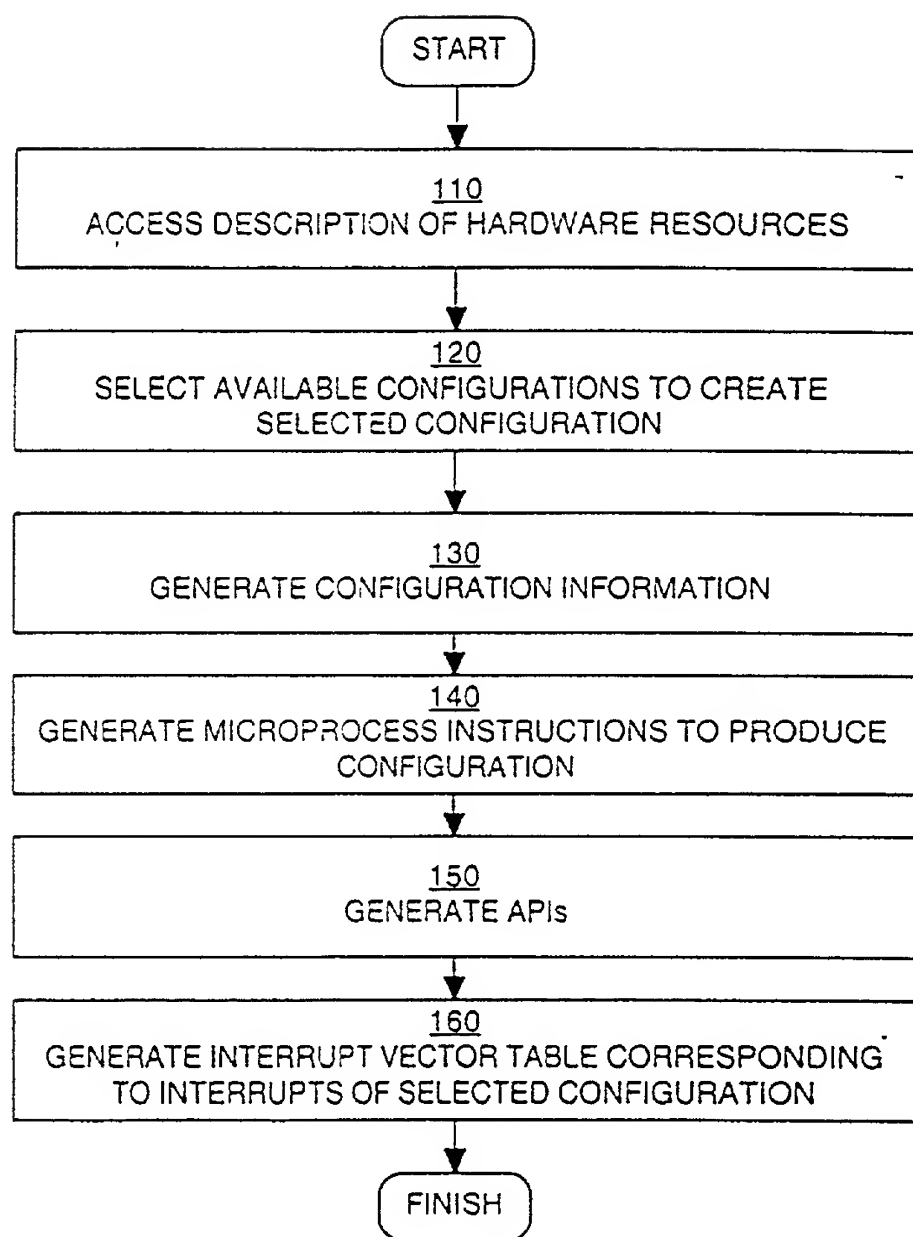


Figure 1

600

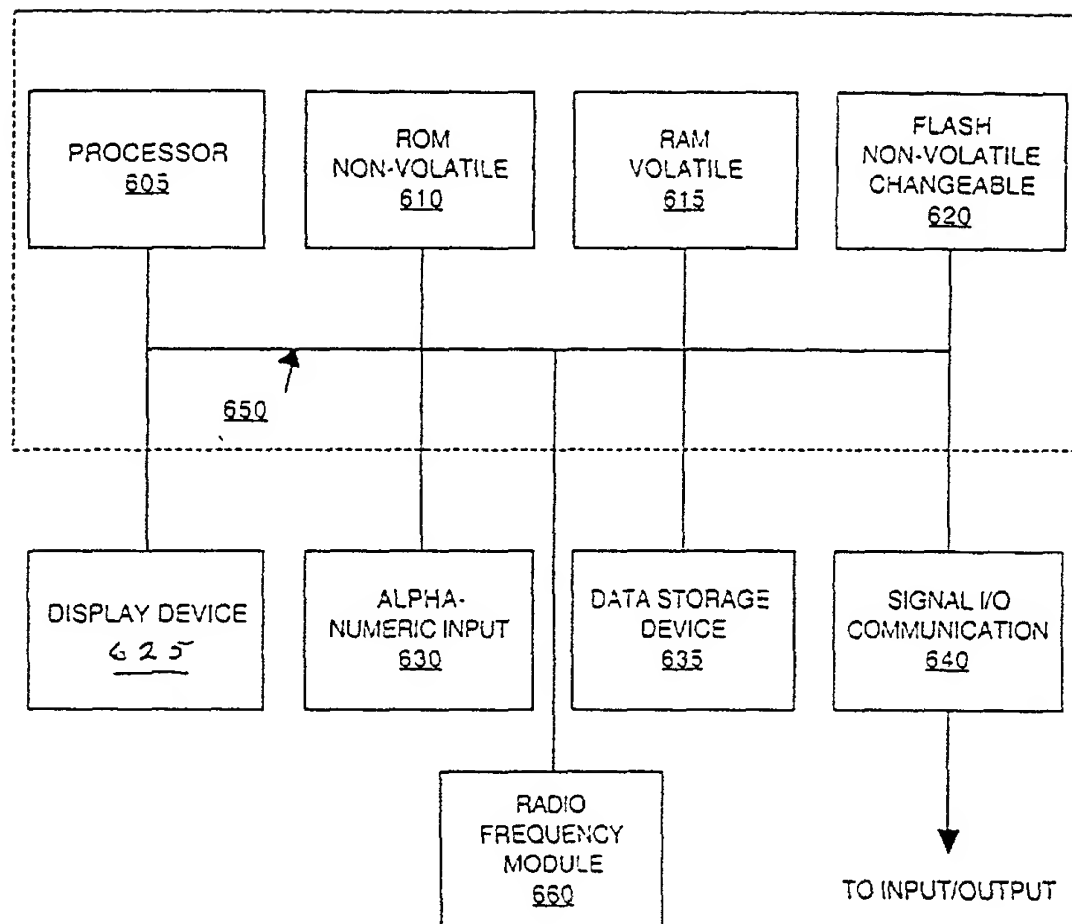


Figure 2

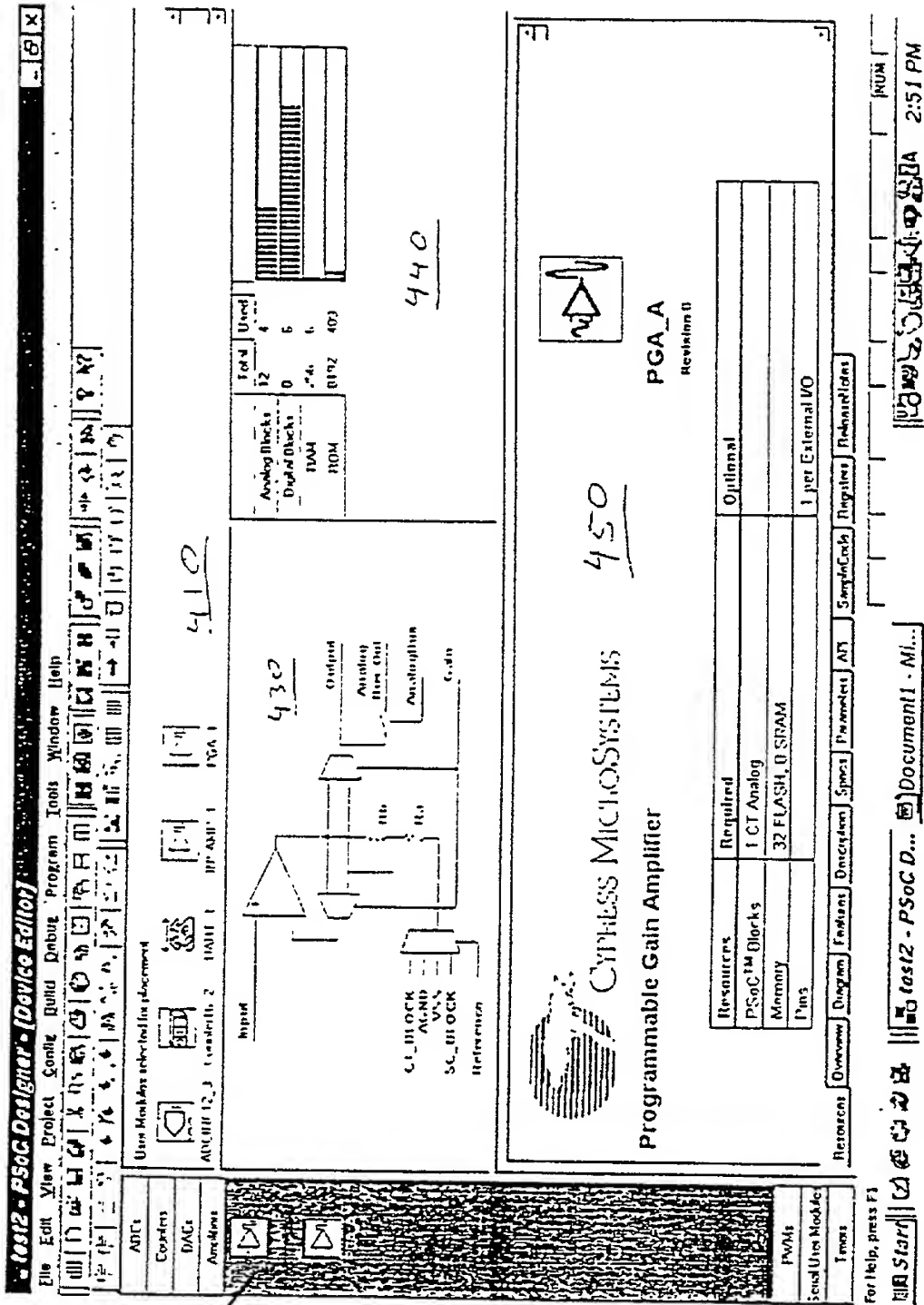
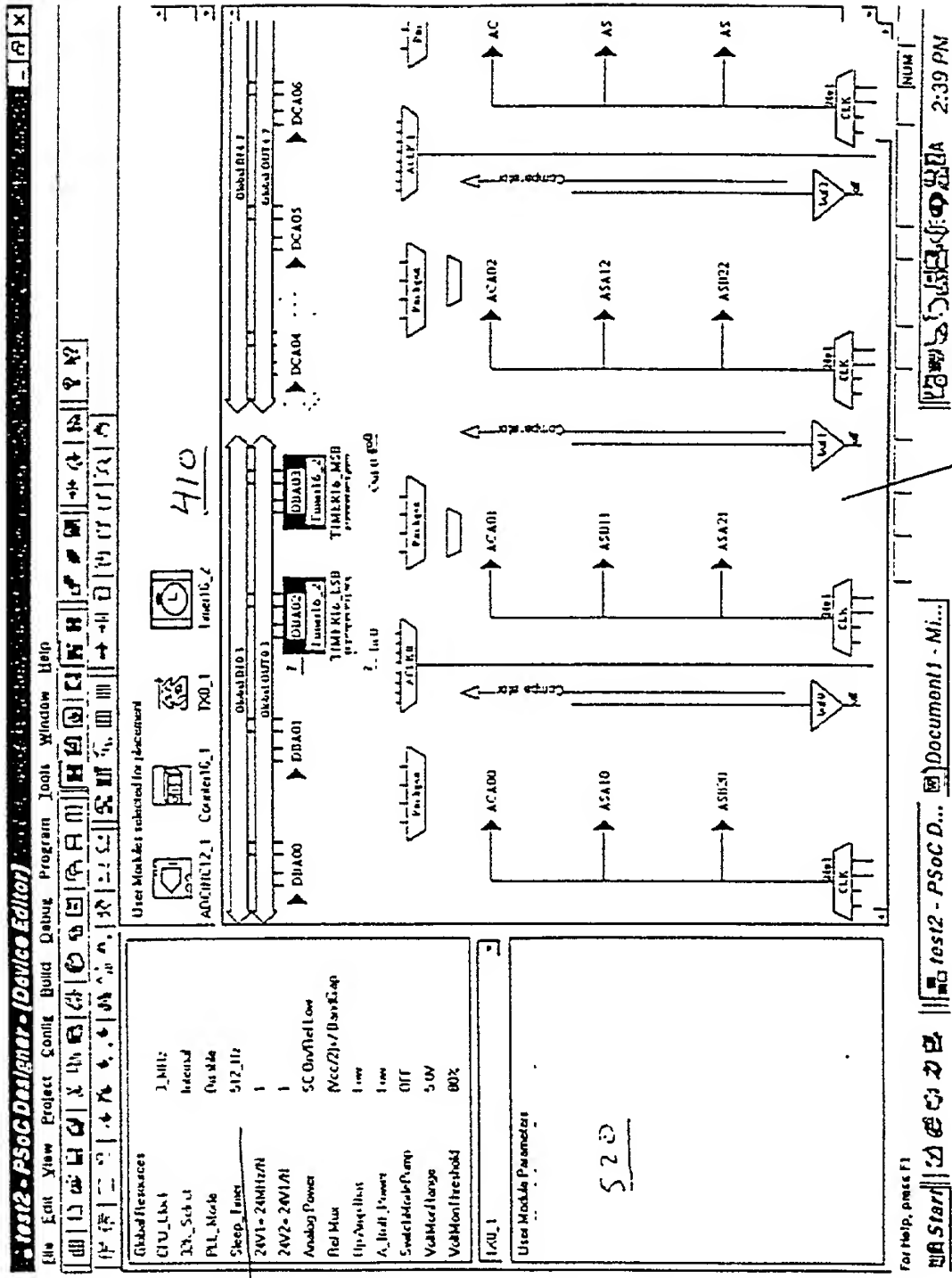


Figure 5-10: PSoc Designer - (Device Editor)

500



510

Figure 5

6000

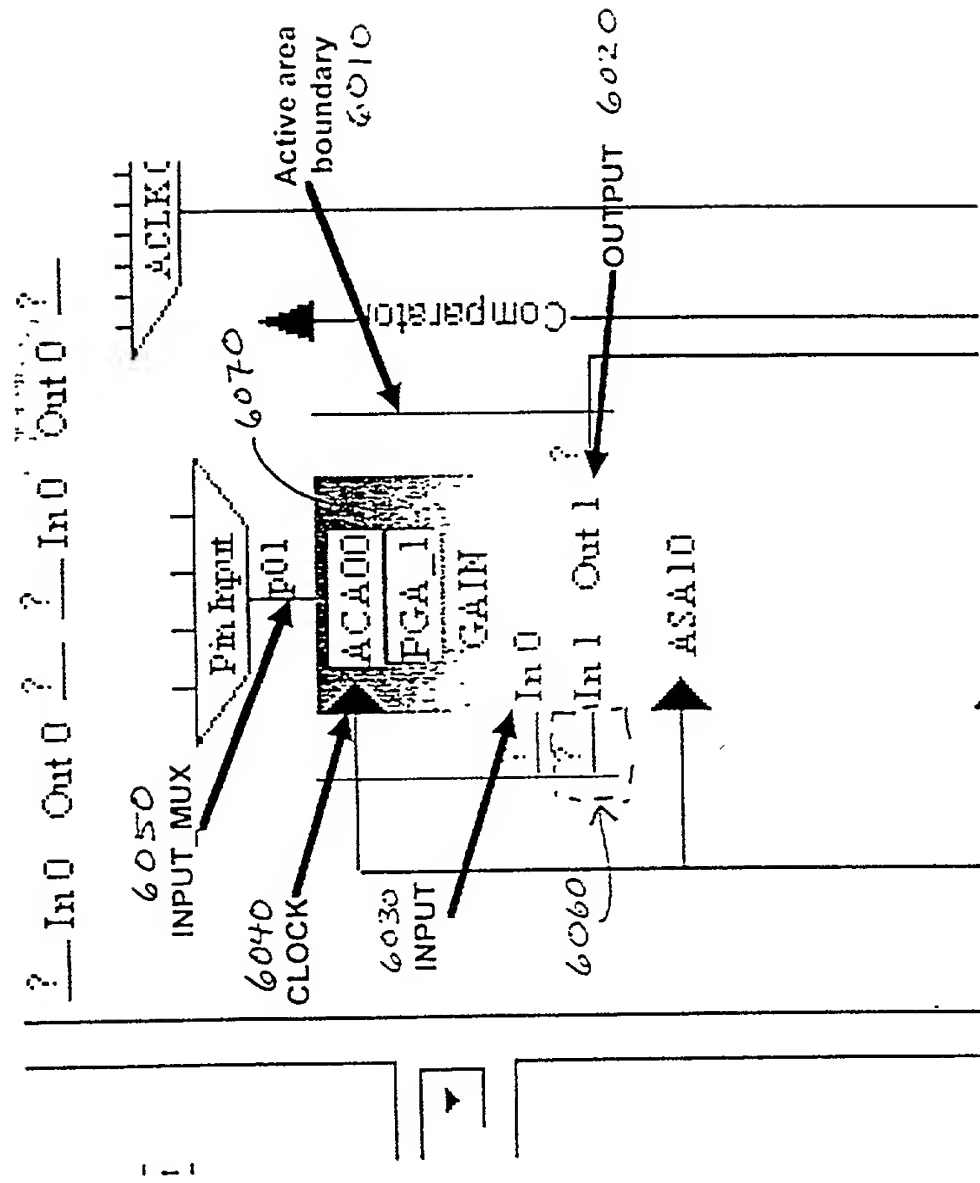


Figure 6

700

```
<!--Project DB Ver 0.03 08/10/00-->
702 - <PSOC_DEVICE_DB>
704 ~ <USER_MODULE_LIST>
      <!-- Variable Resolution Incremental ADC-->
706 ~ <USER_MODULE_NAME="ADCEXP" TYPE="PSOC_ADC" ITTML="ADCEXP.ITM" ICON="ADC.ico" METATITLE="ADCEXP.cmf"
      API_PATH_TYPE="CUSTOM">
707 ~ <SHAPE SHAPE_TYPE="BLOCKLIST">
      708 ~ <BLOCK_LIST>
      710 ~ <BLOCK NAME="ADC" TYPE="ANALOG_SC">
      712 ~ <REGISTER_LIST>
      714 ~ <REGISTER NAME="CR0">
      716 ~ <BITFIELD_LIST>
      718 ~ <BITFIELD NAME="OSZ" VALUE="OSZ_32"/>
      <BITFIELD NAME="CLOCK_PHASE" VALUE="PHASE_NORM"/>
      <BITFIELD NAME="SIGN" VALUE="POS"/>
      <BITFIELD NAME="CAP_SIZE" VALUE="16"/>
      </BITFIELD_LIST>
      </REGISTER>
      <REGISTER NAME="CR1">
      <BITFIELD_LIST>
      <BITFIELD NAME="CAP_SIZE" VALUE="0"/>
      </BITFIELD_LIST>
      </REGISTER>
      <REGISTER NAME="CR2">
      <BITFIELD_LIST>
      <BITFIELD NAME="A_OUT" VALUE="DISABLED"/>
      <BITFIELD NAME="COMP_OUT" VALUE="ENABLED"/>
      <BITFIELD NAME="AZ_PHASE" VALUE="AZ_P111"/>
      </BITFIELD_LIST>
      </REGISTER>
      </BLOCK_LIST>
      </SHAPE SHAPE_TYPE="BLOCKLIST">
      </USER_MODULE_NAME="ADCEXP" TYPE="PSOC_ADC" ITTML="ADCEXP.ITM" ICON="ADC.ico" METATITLE="ADCEXP.cmf">
    </USER_MODULE_LIST>
  </PSOC_DEVICE_DB>
```

FIGURE 7 A

```

<BITFIELD NAME="CAP_SIZE" VALUE="0"/>
</BITFIELD_LIST>
</REGISTER>
<REGISTER NAME="CR3">
<BITFIELD_LIST>
<BITFIELD NAME="REF_SELECT" VALUE="COMP"/>
<BITFIELD NAME="FB_CAP_SELECT" VALUE="PI2_AZ_ENABLE"/>
<BITFIELD NAME="FB_CAP_GND" VALUE="GND_P11"/>
<BITFIELD NAME="SCA_INPUT_MUX_B" VALUE="IN2B"/>
<BITFIELD NAME="SCB_INPUT_MUX_B" VALUE="IN2B"/>
<BITFIELD NAME="SBB" VALUE="DISABLE"/>
<BITFIELD NAME="PWR_SELECT" VALUE="PWR_OFF"/>
</BITFIELD_LIST>
</REGISTER>
</REGISTER_LIST>
</INPUT_LIST>
</BLOCK>
</BLOCK_LIST>
<BLOCK NAME="TMR" TYPE="DIGITAL" INTERRUPT_SOURCE="_TMR_IN1" INTERRUPT_TYPE="JUMP">
<REGISTER_LIST>
<REGISTER NAME="DIG_BasicFunction">
<BITFIELD_LIST>
<BITFIELD NAME="End" VALUE="IsEnd"/>
<BITFIELD NAME="CompareType" VALUE="LToutQ"/>
<BITFIELD NAME="InterruptType" VALUE="TerminalCount"/>
<BITFIELD NAME="Function" VALUE="Timer"/>
</BITFIELD_LIST>
</REGISTER>
<REGISTER NAME="DIG_Input">
<BITFIELD_LIST>
<BITFIELD NAME="DataSelect" VALUE="THigh"/>
</BITFIELD_LIST>
</REGISTER>

```

Figure 7B


```

<REGISTER NAME="DIG_Output">
  <BITFIELD_LIST>
    <BITFIELD NAME="AUXOutputEnable" VALUE="DISABLE"/>
    <BITFIELD NAME="DigOutputEnable" VALUE="DISABLE"/>
  </BITFIELD_LIST>
</REGISTER>
</REGISTER_LIST>
<INPUT_LIST/>
</BLOCK>
</BLOCK_LIST>
<BLOCK_LIST>
  <BLOCK NAME="CNT_LSB" TYPE="DIGITAL">
    <REGISTER_LIST>
      <REGISTER NAME="DIG_BasicFunction">
        <BITFIELD_LIST>
          <BITFIELD NAME="Function" VALUE="Counter"/>
          <BITFIELD NAME="CompareType" VALUE="LToRQ"/>
        </BITFIELD_LIST>
      </REGISTER>
    </REGISTER_LIST>
  </BLOCK>
  <INPUT_LIST>
    <INPUT SOURCE="AnalogOut" TYPE="RESERVED_RESOURCE" REGISTER_NAME="DIG_Input"
    BITFIELD="DataSelect"/>
  </INPUT_LIST>
</BLOCK>
<BLOCK NAME="CNT_MSB" TYPE="DIGITAL" INTERRUPT_SOURCE="CNT_INT" INTERRUPT_TYPE="JUMP">
  <REGISTER_LIST>
    <REGISTER NAME="DIG_BasicFunction">
      <BITFIELD_LIST>
        <BITFIELD NAME="Function" VALUE="Counter"/>
        <BITFIELD NAME="IsEnd" VALUE="IsEnd"/>
        <BITFIELD NAME="CompareType" VALUE="LToRQ"/>
      </BITFIELD_LIST>
    </REGISTER>
  </BLOCK>

```

Figure 7C

```

725- </REGISTER_LIST>
    <INPUT_LIST>
      <INPUT_SOURCE="CNT_LSB" TYPE="BLOCK" REGISTER_NAME="DIG_Input" BITFIELD="DataSelect"/>
    </INPUT_LIST>
  </BLOCK>
</BLOCK_LIST>
730- <RESOURCE_LIST>
  <RESOURCE_NAME="AnalogOut" TYPE="ANALOG_COMPARATOR_OUTPUT">
    <INPUT_LIST>
      <INPUT_SOURCE="ADC" TYPE="BLOCK" />
    </INPUT_LIST>
  </RESOURCE>
</RESOURCE_LIST>
</SHAPE>
740- <PARAMETER_LIST>
  <PARAMETER_NAME="ADCINPUT_SCB" TYPE="INPUT" SOURCE="ADC" REGISTER_NAME="CR1"
    BITFIELD="SCB_INPUT_MUX_A"/>
  <PARAMETER_NAME="ADCINPUT_SCA" TYPE="INPUT" SOURCE="ADC" REGISTER_NAME="CR1"
    BITFIELD="SCA_INPUT_MUX_A_C"/>
  <PARAMETER_NAME="ClockPhase" TYPE="BLOCK" SOURCE="ADC" REGISTER_NAME="CR0"
    BITFIELD="CLOCK_PHASE"/>
  <PARAMETER_NAME="TMRCLK" TYPE="CLOCK" SOURCE="TMR" REGISTER_NAME="DIG_Input"
    BITFIELD="ClockSelect"/>
  <PARAMETER_NAME="CTRCLK1" TYPE="CLOCK" SOURCE="CNT_LSB" REGISTER_NAME="DIG_Input"
    BITFIELD="ClockSelect"/>
  <PARAMETER_NAME="CTRCLKM" TYPE="CLOCK" SOURCE="CNT_MSB" REGISTER_NAME="DIG_Input"
    BITFIELD="ClockSelect"/>
  </PARAMETER_LIST>
  <API_REGISTER_ALIAS_LIST>
    <API_REGISTER_ALIAS_NAME="AtoDcr0" SOURCE="ADC" REGISTER_NAME="CR0"/>
    <API_REGISTER_ALIAS_NAME="AtoDcr1" SOURCE="ADC" REGISTER_NAME="CR1"/>
    <API_REGISTER_ALIAS_NAME="AtoDcr2" SOURCE="ADC" REGISTER_NAME="CR2"/>
    <API_REGISTER_ALIAS_NAME="AtoDcr3" SOURCE="ADC" REGISTER_NAME="CR3"/>
    <API_REGISTER_ALIAS_NAME="CounterMSB" SOURCE="CNT_MSB" REGISTER_NAME="DIG_BasicFunction"/>

```

Figure 7D

```

<API_REGISTER_ALIAS_NAME="CounterMSBSL" SOURCE="CNT_MSB" REGISTER_NAME="DIG_Input"/>
<API_REGISTER_ALIAS_NAME="CounterMSBOS" SOURCE="CNT_MSB" REGISTER_NAME="DIG_Output"/>
<API_REGISTER_ALIAS_NAME="CounterMSBDR0" SOURCE="CNT_MSB" REGISTER_NAME="DATA_0"/>
<API_REGISTER_ALIAS_NAME="CounterMSBDR1" SOURCE="CNT_MSB" REGISTER_NAME="DATA_1"/>
<API_REGISTER_ALIAS_NAME="CounterMSBDR2" SOURCE="CNT_MSB" REGISTER_NAME="DATA_2"/>
<API_REGISTER_ALIAS_NAME="CounterMSBCR0" SOURCE="CNT_MSB" REGISTER_NAME="CONTROL_0"/>
<API_REGISTER_ALIAS_NAME="CounterLSBFLN" SOURCE="CNT_LSB" REGISTER_NAME="DIG_BasicFunction"/>
<API_REGISTER_ALIAS_NAME="CounterLSBSL" SOURCE="CNT_LSB" REGISTER_NAME="DIG_Input"/>
<API_REGISTER_ALIAS_NAME="CounterLSBOS" SOURCE="CNT_LSB" REGISTER_NAME="DIG_Output"/>
<API_REGISTER_ALIAS_NAME="CounterLSBDR0" SOURCE="CNT_LSB" REGISTER_NAME="DATA_0"/>
<API_REGISTER_ALIAS_NAME="CounterLSBDR1" SOURCE="CNT_LSB" REGISTER_NAME="DATA_1"/>
<API_REGISTER_ALIAS_NAME="CounterLSBDR2" SOURCE="CNT_LSB" REGISTER_NAME="DATA_2"/>
<API_REGISTER_ALIAS_NAME="CounterLSBCR0" SOURCE="CNT_LSB" REGISTER_NAME="CONTROL_0"/>
<API_REGISTER_ALIAS_NAME="TimerFLN" SOURCE="TMR" REGISTER_NAME="DIG_BasicFunction"/>
<API_REGISTER_ALIAS_NAME="TimerSL" SOURCE="TMR" REGISTER_NAME="DIG_Input"/>
<API_REGISTER_ALIAS_NAME="TimerOS" SOURCE="TMR" REGISTER_NAME="DIG_Output"/>
<API_REGISTER_ALIAS_NAME="TimerDR0" SOURCE="TMR" REGISTER_NAME="DATA_0"/>
<API_REGISTER_ALIAS_NAME="TimerDR1" SOURCE="TMR" REGISTER_NAME="DATA_1"/>
<API_REGISTER_ALIAS_NAME="TimerDR2" SOURCE="TMR" REGISTER_NAME="DATA_2"/>
<API_REGISTER_ALIAS_NAME="TimerCR0" SOURCE="TMR" REGISTER_NAME="CONTROL_0"/>
<API_REGISTER_ALIAS_NAME="Comp_Ctrl" SOURCE="AnalogComp" TYPE="RESERVED_RESOURCE"

REGISTER_NAME="AnalogComparatorControl"/>
</API_REGISTER_ALIAS_LIST>
</USER_MODULE>
</USER_MODULE_LIST>
</PSOC_DEVICE_DB>

```

Figure 7E